

# Agricultural Situation

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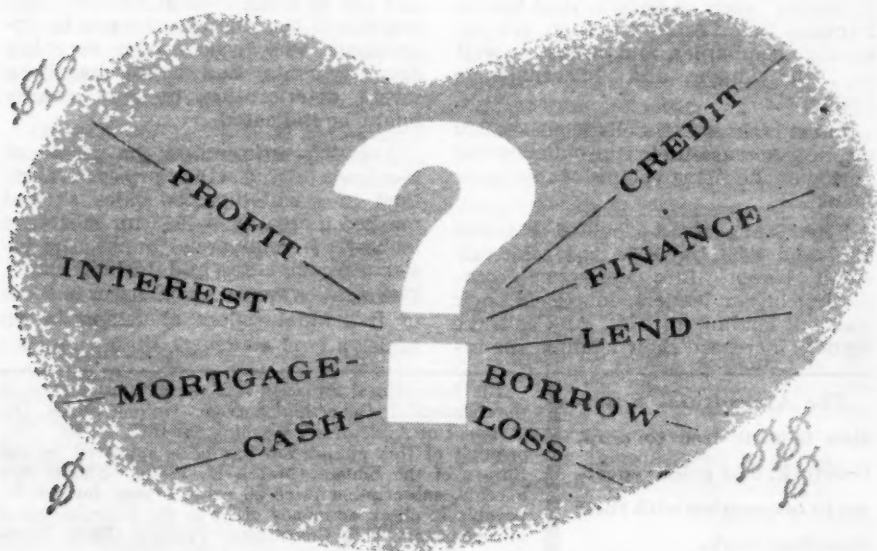
## FARM MORTGAGE BORROWING INCREASING SINCE 1959

There has been a rapid increase in farm-mortgage borrowing for nearly 4 years.

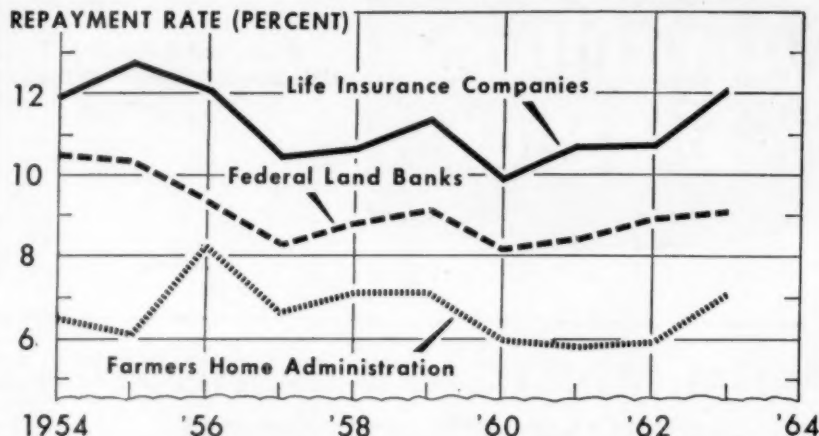
Although net farm income has been higher than the reduced level of 1959 and 1960, it has not been on an up-trend. Farm real estate prices also are rising above already advanced levels.

These conditions pose a question about the quality of farm-mortgage loans: Are weaknesses developing that later could lead to delinquencies, especially if income or land values should turn down?

Despite the apparent troublesome combination, actual danger signs re-



## FARM MORTGAGE DEBT REPAYMENT RATES TO SPECIFIED LENDERS



THE AMOUNT OF REPAYMENTS DURING THE YEAR AS A PERCENTAGE OF FARM MORTGAGE DEBT OUTSTANDING AT THE BEGINNING OF THE YEAR.

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vealed in a recent study of the farm-mortgage loan experience of lender groups over the last several years were minor.

The study covered several classes of lending groups—"reporting lending institutions" such as Federal land banks, Farmers Home Administration, life insurance companies, and banks; as well as "Individuals and Miscellaneous Lenders."

Individuals and miscellaneous lenders did not increase their share during the period of the rising volume of mortgage loans.

FHA loans about doubled between 1957 and 1963, but FHA is a relatively small lender. Life insurance companies, larger lenders, increased their share of lending a little. And as these lenders increased their lending, the in-

dividual and miscellaneous group decreased slightly their share of the farm-mortgage lending.

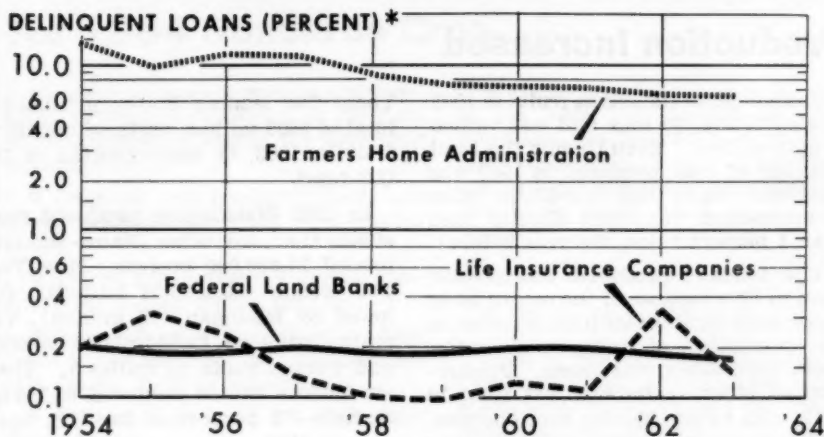
This kind of activity indicates that the recent rapid growth of borrowing does not mean a sudden expansion by any one or a few certain lenders. For example if the number of loans by individuals, who usually offer very low downpayments, had risen sharply a severe deterioration in loan quality might be indicated.

Available information on ratios of mortgage debt to selling prices of farmland in credit-financed sales showed marked increases in 1963 for mortgage loans from commercial banks, the insurance companies, and the land banks. These ratios moved much closer to those of individual sellers of farms (often under a land contract) than in earlier

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## DELINQUENT FARM MORTGAGE LOANS HELD BY SPECIFIED LENDERS



\* DEFINITIONS VARY BY LENDER. DELINQUENCIES OR PAYMENTS BEHIND SCHEDULE ARE SHOWN AS PERCENTAGE OF TOTAL AMOUNT OF FARM MORTGAGE LOANS HELD BY LENDER, AS OF THE END OF EACH YEAR.

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years. Many loans of these institutional lenders are to established farmers seeking to expand their operations.

Institutional lenders, the study shows, may have held their share of the market by raising their lending ratios closer to those of individual lenders. Thus if a problem were to develop it likely would be distributed across the spectrum of lenders rather than be confined to one or a few.

Of course, a growth in refinancing loans can indicate debt difficulties. But there are many reasons for refinancing, with varying effects on loan quality. Although the study shows substantial variation in refinancing among the different institutional lenders, there seems to be little change over the years in the proportions of loans refinanced.

Repayment rates on loans are an excellent barometer of the quality of outstanding indebtedness. Problems could develop, for example, if the earnings on mortgaged farms did not keep pace with the rises in indebtedness and property values.

However, repayments on loans were well maintained over the period. De-

linquencies were few, showing no upward trend. Even where farm incomes suffered severe temporary declines, repayments continued strong, and delinquencies were negligible.

Before the debt position of the delinquent farm borrower becomes chronic and he faces involuntary foreclosure, selling out might be the preferred recourse. The strong land market made this latter action easier. This has been a factor in the low delinquency rate, but it probably has not been a major one.

Further confidence also can be felt from the lack of shifting in the relative importance of the various lenders during the recent upsurge in borrowing.

Although the statistics are not complete, there is enough significance in the information available to conclude that if there is any weakness in the farm-mortgage debt situation it is probably slight. Loan repayments and delinquencies would have to change very much from their present levels before they could be called unsatisfactory.

Philip T. Allen  
Van E. Eitel  
*Economic Research Service*

# 1963 NONCITRUS FRUIT VALUED AT \$800 MILLION

## Production Increased

Production of noncitrus fruits in 1963 totaled 10,224,000 tons and was valued at \$815 million. Even though the total quantity of fruit produced in 1963 was 1 percent greater than in 1962, the value of production was down slightly (less than 1 percent below the year before).

The tonnage produced was greater than in 1962 because of the record large grape crop together with an increase in the production of apricots, avocados, nectarines, olives, and plums. Production of other fruits was less than in 1962, with sweet cherries, sour cherries, and pears down sharply. The pear crop was the smallest since 1927. The sour cherry crop was less than half as large as the 1962 record large crop, and the smallest since 1945.

From a tonnage standpoint, grapes were the most important crop, accounting for 3,793,000 tons—37 percent of the U.S. total for all noncitrus fruits. Apples were second at 3,012,000 tons or 29 percent of the total. Peaches ranked third (1,771,000 tons, 17 percent) and pears fourth (477,000 tons, 5 percent).

In value, however, apples outranked grapes and took first place with the crop valued at approximately \$250 million—up \$4 million from 1962. Grapes were the second most valuable crop totaling \$195 million, down \$6 million from the year before. Next in importance were peaches valued at \$140 million; then pears, \$51 million, compared with \$134 million and \$52 million respectively in 1962.

State by State, based on the value of production, California, the most important fruit State, accounted for \$374 million or 46 percent of the U.S. total, followed in order of importance by Washington at \$101 million; New York, \$63 million; Michigan, \$46 million; and Pennsylvania, \$25 million.

These five leading States produced a total of \$609 million worth of noncitrus fruit in 1963, or three-fourths of the U.S. total.

In 1963 Washington produced more apples than any other State—the crop totaled 31,900,000 bushels. New York was second (20,400,000 bushels), followed by Michigan (12 million), Virginia (9 million), California (8,400,000), and Pennsylvania (8 million). These six leading States produced 89,700,000 bushels—71 percent of the U.S. apple crop in 1963.

As usual, most of the Nation's grapes were produced in California for 92 percent of the U.S. total. New York was next (107,000 tons), followed by Washington (76,600), Pennsylvania (34,000), and Michigan (33,500). Usually Michigan holds third or fourth place.

California is also the leading peach State and in 1963 produced 43,420,000 bushels of peaches or 59 percent of the U.S. crop. South Carolina was the second most important peach State (7,800,000 bushels) and Georgia, third (5,400,000).

Most of the U.S. pear crop is produced on the west coast. In 1963, Washington, Oregon, and California together produced 405,500 tons of pears which was 85 percent of the U.S. total although those three States usually produce 88 percent of the total. California continued to be the leading pear State although production (183,000 tons) was the smallest since 1935. Oregon, which usually holds second place in pear production, also had a poor crop (85,000 tons) and dropped behind Washington, which harvested an above average crop of 137,500 tons.

Earl L. Park  
Statistical Reporting Service

# THE FRUIT SITUATION . . .

## Key Conditions and Prospects For 1964 Noncitrus Crop

Here are six key conditions and prospects for the fruit economy at the start of the processing season for 1964-crop noncitrus fruits:

- Cannery and freezer stocks are down substantially from year-earlier levels.

- Prices for processed items generally are higher than a year ago.

- Prospects are for heavier 1964 crops of various fruits regularly canned and frozen in large volume.

- Consumer demand for fruit continues strong.

- Processed citrus fruits and juices will continue in light supplies at high prices.

- Increases of about 10 to 15 percent in the 1964 U.S. canned and frozen fruitpacks are needed to provide sufficient supplies for domestic consumption and exports, and for an adequate carry-over at the season's end.

### Major Uses of 18 Noncitrus Fruits

Most of the 18 important noncitrus fruits are used for processing. Last year's crop of about 10.4 million tons went this way: Processing, 61 percent; fresh use, 37.8 percent; and unused for economic reasons, 1.2 percent.

Ben H. Pubols  
Economic Research Service

**Here's How:** If you know the number of bushels of grain by volume in a crib, here's how to find the number by weight.

For example, a bin contains 1,371 bushels of shelled corn by volume and the test weight of one bushel is 46 pounds. The correct conversion factor from the table is 0.82. The solution is:

$$0.82 \times 1,371 = 1,124 \text{ bushels by weight}$$

Test weight of a bushel (Pounds)	Conversion factors		
	Wheat, soybeans and beans	Flax, shelled corn, grain sorghum and rye	Barley
64	1.07	—	—
62	1.03	—	—
60	1.00	1.07	—
58	0.97	1.04	—
56	0.93	1.00	—
54	0.90	0.96	—
52	0.87	0.93	1.03
50	0.83	0.89	1.04
48	0.80	0.86	1.00
46	0.77	0.82	0.96
44	0.73	0.79	0.92
42	0.70	0.75	0.87
40	0.67	0.71	0.83
38	0.63	0.68	0.79
36	0.60	0.64	0.75



# REFRIGERATED WAREHOUSE SPACE FOR FARM ORIGINATED PRODUCTS INCREASED AGAIN IN 1963

The Nation's refrigerated space for the storage of farm commodities and processed food products continues to expand, according to the latest biennial survey of the capacity of refrigerated warehouses.

On October 1, 1963, the national refrigerated storage capacity, excluding Alaska and Hawaii, totaled 1,108 million gross cubic feet, a gain of about 84 million since October 1, 1961. (There were 4 million gross cubic feet of storage in the two newest States.)

Public general warehouse capacity in the 48 States increased 42 million to 596 million cubic feet; private and semiprivate capacity was up 25 million to 218 million cubic feet; the capacity in apple houses (rooms used primarily for apples and/or pears) increased by 18 million cubic feet to total 243 million but meatpackers reported their storage capacity decreased by 2 million cubic feet.

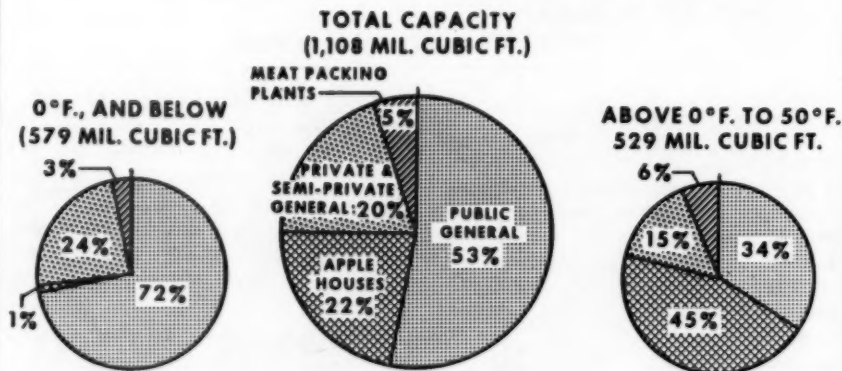
This survey included only facilities having refrigerated space cooled to temperatures of 50° F. or below in which food stocks are held for 30 days or more. Space in wholesaler, jobber, retailer, or other types of businesses used for holding products less than 30 days was not included. Also excluded was space maintained by locker plants, hotels, and the armed services.

Since October 1, 1961, the net increase in freezer space exceeded the cooler space gain threefold. Freezer space (0° F. or lower) rose 63 million cubic feet from 1961 to 1963 and totaled 579 million cubic feet in 1963. Cooler capacity (space that can only hold temperatures above 0° F.) gained 21 million to a total of 529 million cubic feet during the same period.

The net effect of increased demands for freezer space in the Nation is illustrated by the following percentages. In 1943, freezer space comprised 17 percent

## GROSS REFRIGERATED SPACE

*Distribution by Type of Warehouse, October 1, 1963*



of the national refrigerated capacity. Ten years later, it had increased to 46 percent of the total and in 1963 was 52 percent of the refrigerated capacity in the United States.

Increased freezer capacity resulted primarily from gains within the public general warehousing industry. Of the 232 million cubic feet of freezer capacity added to the national total since 1953, about 164 million cubic feet were added in public general warehouses.

The 1963 survey showed that approximately 72 percent of the national freezer capacity of 579 million cubic feet was public general space; 24 percent for private and semiprivate general use; and 4 percent was in meatpacking and a small number of fruit houses.

Gross refrigerated storage capacity increased in all regions of the country during the period. Facilities in the south Atlantic, Pacific, and west north-central regions, in that order, increased their total capacities since 1961 substantially more than did facilities in other regions. In these three regions volume increased 59 million cubic feet between 1961 and 1963—70 percent of the national gain during the period.

On October 1, 1963, the region with the largest gross storage capacity was the Pacific, with 320 million cubic feet. Much of this space served as storage for fruits and vegetables produced in that area. The next three regions in order of size were the east north-central with 178 million, the middle Atlantic with 177 million and the south Atlantic with 157 million cubic feet. A large share of the space in the south Atlantic States was for storage of concentrated orange juice and nut crops.

Washington State had the largest gross storage capacity, 143 million cubic feet. California, with 127 million, was second and New York ranked third with 96 million.

There was a high degree of clustering of capacity in certain metropolitan areas. About 40 percent of the national capacity was in 723 plants in 38 metropolitan areas. Chicago, New York, Kansas City, and Los Angeles, in that order, were the principal storage areas on the basis of total warehouse capacity.

During the decade ended 1963, the national refrigerated capacity increased 48 percent compared with an

18-percent gain in the total U.S. population excluding Hawaii and Alaska. On a per capita basis the refrigerated warehousing industry had about 5.9 cubic feet of storage space for each person, compared with 4.7 cubic feet in 1953. There were 3,241 refrigerated warehouses (excluding 13 plants in Alaska and Hawaii) in the October 1, 1963, survey. One-fourth of the plants were public general warehouses, nearly another one-fourth were private and semiprivate general facilities and 4 percent were meatpacker storages. The remaining plants were apple and pear storages (apple houses). These facilities were located mainly on farms or in orchards in the major fruitgrowing States. Washington, Michigan, and New York were the States with the largest number of refrigerated apple houses.

For the first time information is available on the capacity of controlled atmosphere storage in the Nation. Controlled atmosphere storage consists of a gastight refrigerated room equipped to maintain desired levels of oxygen and carbon dioxide for storage of apples. The use of CA storage has helped farmers and orchardists extend the marketing season of stored apples well into the spring months.

On October 1, 1963, there were 265 plants with controlled atmosphere rooms with a total capacity of over 11 million bushels. States with the greatest number of plants with CA rooms were New York, Michigan, and Washington, in that order. These three States had nearly 70 percent of the Nation's total CA capacity.

The amount of refrigerated space increased more rapidly west of the Mississippi River than in the East during recent decades. Development of frozen fruit and vegetable processing industries in the West was a major factor in this westward shift of space. Twenty years ago 41 percent of the total refrigerated space was located in States west of the Mississippi River. In 1953 the percentage had increased to 44 percent and by 1963, 47 percent of the storage capacity was west of the river.

Julius A. Brosa  
*Statistical Reporting Service*

# outlook



Based on Conditions as of August 5, 1964

## FARM OUTPUT

Farm output more than kept pace with our 25 percent gain in population since 1950, although land on farms decreased more than 38 million acres. Cropland acreage also decreased, and plantings intended for harvest this year are off nearly 2 million acres from last year, more than a tenth from the 353 million in 1950 (59 crops, 48 States).



## BROILER PRICES

Broiler prices are up. Recent broiler chick placements and settings were reduced (April-June) and will cut broiler output in this third quarter to about year-earlier level. Broiler prices through September will likely average above the 14.2 cents a pound for last year's third quarter—up 0.2 cent from fiscal 1964's 14 cents. However, this price strength is stimulating increases in chicks hatched for fourth quarter—likely to depress prices again. But with a downward adjustment in hatching egg supply flocks underway, rapid production cutbacks can be made, responding to any price declines. One reason for last year's price problems was the lack of such flexibility.



## FARM INCOME

Realized net farm income the first half of the year was 1 percent off the year-earlier rate to a seasonally adjusted annual rate of \$12.3 billion. But the average income rose a bit because farm numbers decreased. Realized gross farm income was up, near a \$42 billion annual rate. Cash receipts from marketings were up a little, Government payments were up; for the year they may go 25 percent above last year's \$1.7 billion. Production expenses also rose. They were at an annual rate of \$29.7 billion, up about \$400 million from a year earlier.



## CROP PRODUCTION

Some plantings this year have been up, some down. Soybeans acreage rose 7 percent; wheat, 4 percent; cotton acreage held about level; and feed grains acreage dropped 5 percent. Much of the feed grain cutback is attributed to farmer participation in the feed grain program this year.



## HOG SLAUGHTER

With hog slaughter supplies expected to run 4 to 6 percent below 1963 levels into the early part of next year, prices should be favorable the rest of this year and all next winter. This spring pork production held up, beef output was much above a year earlier, and there were unusually large pork holdings in cold storage. Since May, however, slaughter has been dropping sharply and prices went up about \$3 per hundredweight from May to mid-July. The peak this year should be later than last, which was in July at \$18.44 per hundredweight. Prices this fall will likely be above a year earlier and hold up better than last October-December when prices slumped to an average under \$15.

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## THE SHARE OF UPLAND COTTON HARVESTED BY MACHINE INCREASES

The share of upland cotton harvested by machine increased 2 percent during the 1963-64 season, according to information reported by the Economic Research and Agricultural Marketing Services.

Across the Cotton Belt, more than half the cotton was machine picked, a fifth was machine stripped, and 1 percent machine scrapped—almost three-fourths mechanically harvested.

By States, the proportion harvested by machine varied from a low of 37 percent in Alabama to a high of 96 percent in Arizona. Most important was the gain in the use of machine pickers in Louisiana and the major cotton-producing States in the Southeast. More than three-fifths of the Texas-Oklahoma cotton production was harvested by mechanical strippers.

Less seed cotton was required to make up a 500-pound bale of upland cotton this season than last except for hand-snapped cotton, which remained about the same.

For the 1963-64 season a 500-pound bale of upland cotton required 1,388 pounds hand-picked seed cotton; 1,952 pounds, hand snapped; 1,476 pounds, machine picked; 2,214 pounds, machine stripped; and 2,389 pounds of machine-scrapped cotton.

The average charge for saw ginning and wrapping a 500-pound gross-weight bale of upland cotton during the season was \$16.80—a 28-cent drop from 1962-63. By States, average ginning charges varied from \$12.21 per bale in Virginia to \$19.52 in Missouri. Changes from average charges this season from the previous one was less than 30 cents a bale in 11 States. Average charge per bale decreased more than 30 cents in Arkansas, Oklahoma, and Tennessee. The average charge per bale increased more than 30 cents in Arizona and Florida.

Improved turnouts this season contributed to the lower average ginning charge.

Homer G. Ponder  
*Economic Research Service*

# SUPPLIES OF MARINE OILS INCREASE SINCE 1947 LOW

Since World War II supplies of marine oils in the United States have shown an irregular upward trend, increasing from a postwar low of 281 million pounds in 1947 to more than 450 million pounds in recent years.

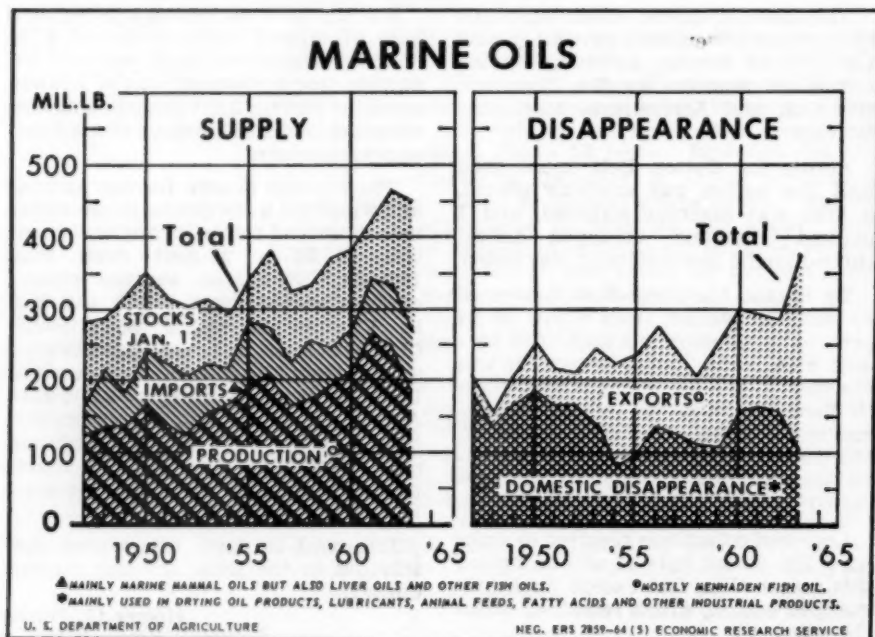
U.S. marine oils are important in domestic and foreign markets, even though they account for less than 3 percent of the Nation's total output of fats and oils (including oil equivalent of oilseeds). In recent years about 45 percent of the U.S. marine oils were consumed domestically and the other 55 percent were exported.

At home, marine oils are used in drying oil products, lubricant production, animal feeds, fatty acids, and other industrial purposes. In these industries they compete effectively with commodities of agricultural origin such as soybean, linseed, castor, tung, and tall oils. Fishmeals and fish solubles are other products produced jointly with oil from certain marine animals

and are important ingredients in the livestock and poultry feeding industry.

Fishmeal supplies have increased since the end of World War II. In 1963, supplies totaled 675,000 tons compared with 209,000 in 1946. Annual domestic production of fishmeals increased from around 200,000 tons in 1946 to about 320,000 in 1955. Output remained at a high level until 1963, when it dropped to 298,000 tons. Imports of fishmeal in recent years have accounted for most of the annual increase in supplies. In 1963, approximately 375,000 tons were imported, compared with 8,000 tons in 1946.

Body oils, the major marine oil group in the United States, are obtained mainly from whole fish and fish waste resulting from canning, filleting, and dressing fish. These oils are derived mainly from menhaden, herring, alewife, salmon, tuna, mackerel, and whales and are used predominantly as drying oils in the surface coatings industry.



Fish liver and viscera oils, the other group, are extracted from the internal organs and trimmings of various fish. The main source is from codfish and certain species of the shark family, although the most commonly known is cod liver oil. The main value comes from their high content of vitamins A and D. Synthetic production of these vitamins has materially curtailed the demand for fish liver oils in recent years.

Menhaden fish, the major domestic source of marine oils, are not used for human consumption because they are too oily in taste and quite bony.

However, oil obtained from this single species accounts for about 90 percent of the total U.S. output.

Practically all of the U.S. marine oils are produced along the Atlantic and Gulf coasts. The presence of menhaden in the waters off these shores primarily explains this concentration. Marine oils produced along the Pacific Coast are obtained mainly from the herring, tuna, mackerel, and other types.

Marine oil production in the postwar period has ranged from a low of 124 million pounds in 1952 to a high of 266 million pounds in 1961. During the 1950's, production increased rather steadily. However, output in 1963 dropped sharply to 186 million pounds because of a poor fishing season for menhaden.

Domestic disappearance during this period has been irregular, ranging from 185 million pounds in 1947 to a low of 83 million in 1954. Domestic use averaged 159 million pounds in 1960-62, but in 1963 it dropped to 104 million pounds, apparently because of increased prices for menhaden oil.

Marine oil utilization in surface coatings is due to the fairly stable, moderate price and the high quality of finishes realized with fish oils. Marine oils have limitations, just as other raw materials, such as a tendency for alkyds made from fish oils to discolor on ultraviolet exposure. Nevertheless, marine oils are used in substantial volume in alkyd resins, varnishes, and paints.

Exterior house paints contain heat-bodied marine oils mixed with raw linseed oil. Marine oils are used also in aluminum paints (exterior and in-

terior), in barn and roof paints, rust-proof coatings, and undercoat paints. In varnish manufacture, bodied fish oil is used with tung oil. This outlet probably has expanded, since the varnish industry has been taking advantage of the lower cost fish oil to replace some of the high-priced tung oil in varnish formulations.

The United States accounts for around 10 percent of total world production of marine oils and is a major country in world trade. Basically, this trade consists of exporting menhaden oil and importing domestically scarce marine items (mostly whale sperm oil, which is valuable as a lubricant for fine instruments). Because it has few economical substitutes, whale sperm oil is stockpiled by the Government as a strategic commodity for defensive purposes.

In 1950, the United States reversed a long-term trend by becoming a net exporter of marine oils for the first time. Since then, exports have grown markedly. In 1963, exports totaled almost 275 million pounds, a record. Europe, the leading market, takes about 90 percent of U.S. exports. The Netherlands, West Germany, Norway, Sweden, and Canada have been the major takers.

In 1950-54, imports of marine oils averaged 72 million pounds or equal to about one-half of U.S. production. Imports in 1963 were 83 million pounds. Western Europe and Japan are the major suppliers.

Fish oil prices (menhaden, crude, tanks, f.o.b. Baltimore) have declined sharply since the end of World War II, from 18.6 cents per pound in 1947 to 4.6 cents in 1962. At this lower level, they were one of the lowest priced oils on the world market. This relatively low price of fish oil gave it a comparative advantage over that of competing drying oils such as soybean, linseed, and tung oils. However, prices rose rapidly in 1963, from 4.0 cents per pound in January to 7.7 cents in December 1963, due to reduced U.S. menhaden oil output and declines in world marine oil production. June 1964 prices of 8.5 cents still reflected this tight supply situation.

Stanley A. Gazelle  
*Economic Research Service*

# FLOWERS, ORNAMENTALS A GROWING U.S. BUSINESS

Cut flowers and nursery products make up a tidy \$120 million a year agricultural business in six selected States, according to recent surveys by the Crop Reporting Board.

Last year, for example, sales of carnations, chrysanthemums, gladiolus, and roses had a wholesale value of \$64.1 million and sales of eight classes of nursery products had a wholesale value of \$58.6 million.

The study covered sales by commercial producers who grow and sell \$2,000 or more of nursery products, cut flowers, bulbs, seeds, and bedding, vegetable, flowering, or foliage plants in 1 year. Government and reforestation nurseries were excluded.

The six States—California, Colorado, Florida, Illinois, Iowa, and New York—showed total increases in 1963 of \$4.5 million in cut flowers and \$3.8 million in nursery products above 1962.

For both cut flowers and nursery products California is the leading State, commanding more than half the nursery and a third of the floral production.

Iowa, the only one of the six States reporting a smaller wholesale value for cut flowers last year than in 1962, had the highest percentage of increase for nursery products—18 percent. California showed the greatest increase in

cash value of nursery products—\$1.6 million.

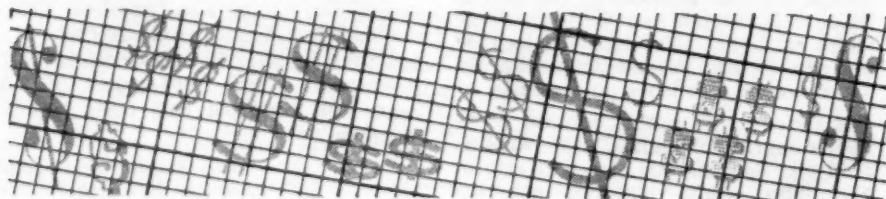
The value of pompon chrysanthemums rose 14 percent for the greatest increase among cut flowers, standard chrysanthemums were up 9 percent; roses, 8 percent; glads, 5 percent; and carnations, 4 percent above 1962 values.

Both California and Colorado continued to expand in the production of carnations in 1963, and growers indicate a further expansion this year, especially in California. Other States in the survey expect a decrease, although Upstate New York expects to increase production.

Each of the nursery products studied showed increases in total wholesale value for 1963 above 1962. Broad-leaved evergreens were valued at \$17 million; coniferous evergreens, \$13.8 million; citrus and subtropical fruit trees, \$8.2 million; rose plants, \$6.3 million; deciduous fruit and nut trees, \$5.3 million; deciduous shade trees, \$4.6 million; deciduous shrubs, \$2.9 million; and grapevines, \$0.6 million.

One lesson we can learn from the popularity of this "growing business" is that man cannot live by bread alone—he must have beautiful flowers and shrubs and he's willing to pay the price for them.

Earl L. Park  
*Statistical Reporting Service*



# PHASES OF CATTLE CYCLES FROM 1949 TO 1958

The most recent complete cattle inventory cycle, from 1949 to 1958, offers a good example of the different phases of live weights at slaughter through which cattle go during a cycle.

On the average, the live weight of steers slaughtered under Federal inspection tends to increase at the beginning of a cycle when cattle numbers are accumulating. Cattle prices also rise during this period, and profits can be increased—if feed costs stay the same—by feeding to heavier weights. For example, from 1949 to 1952 the average slaughter weight rose from 994 pounds to 1,019.

During this early phase of the inventory buildup, the ratio of beef-steer to corn prices is always relatively high. The ratio is the price per hundred-weight of slaughter steers relative to feed costs.

Another time that weight may increase is at the cycle's peak. During the peak—1955-56—weights increased from 986 pounds to 1,029. This shows how feeders—expecting higher prices—often withhold fed cattle from market at the peak. Sometimes losses become rather heavy because prices are depressed during this phase of the cycle.

Up to the peak of the cycle, and generally during the liquidation phase following the peak, weight follows the beef-steer/corn price ratio.

While the cattle numbers were still building up—between 1952 and 1954—the average live weight of steers slaughtered dropped as the steer-feed ratio dropped. Then, during 1957 and 1958, when stocks were being liquidated, the same relationship held—the weight rose with the rising ratio.

Forrest Walters  
*Economic Research Service*





**MOST PROFITABLE WEEKLY FEEDING SCHEDULE**

Price per hundredweight for—			Least-cost ration		Milk output	Return over feed cost
Grain	Hay	Milk	Grain	Hay		
Dollars			Pounds			Dollars
3.00	0.75	3.00	61	268	256	3.84
3.00	1.00	3.00	91	180	261	3.28
3.00	1.25	3.00	122	92	258	2.94
3.00	0.75	4.00	95	242	280	5.53
3.00	1.00	4.00	118	176	282	6.01
3.00	1.25	4.00	141	110	281	5.66
3.00	0.75	5.00	115	226	291	9.39
3.00	1.00	5.00	133	173	293	8.89
3.00	1.25	5.00	152	120	292	8.53

## Computer Shows Profitable Feeding Level

Prices for hay, grain, rations, and other production factors fed into a computer can show the most profitable feeding schedules at varying milk prices.

Cooperating with USDA, economists at Iowa State University have been using the computer to program profits for a typical dairy herd. One of their resultant tables is shown here.

Let us see how it works. For example, with the figures fed to the computer, what is the lowest profitable feeding level?

The lowest level in the table shows feed prices at \$3 per hundredweight for grain and 75 cents for hay and milk price set at \$3 per hundredweight. At that point the computer suggests feeding the cow 61 pounds of grain, and 268 pounds of hay a week to get 256 pounds of milk. The return over feed cost would be \$3.84.

Then, if the milk price were raised to \$5, the computer suggests feeding the cow 54 pounds more grain but 42 pounds less hay. Then, according to the table, the cow will give 35 pounds more milk and earn \$9.39 over feed cost—some \$6 more than at the \$3 milk price.

Suiting the profit factor to the variations of hay and grain prices, the computer was able to select a higher proportion of the feed that became relatively more economical.

Temperature and several cow features were also programed—the computer synthesized cows of various weights, ages, inbreeding, and phases of lactation. Then, most profitable levels of feeding were computed for each synthetic "cow" under various grain, hay, and milk prices. The computer also offered the most profitable feeding schedules seasonally, setting the temperature at high and low levels.

Although the results are limited because only a limited number of feeding situations were tried, they demonstrate the usefulness of this type of analysis. The information came from 2 drylot experiments carried out over 6 years with a total of 72 cows selected from the dairy farm at Iowa State University. The basic design for each experiment was the same, with rations and levels of feeding carefully controlled. Daily records were made of feed consumption and milk production during the experiments.

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## EXPORTS OF FRUIT

Peaches, fruit cocktail, and pineapples led U.S. exports of canned fruits in recent years (see chart). In 13 seasons from 1950-51 exports of canned peaches increased 13-fold. Fruit cocktail and pineapple exports increased somewhat less sharply. Exports of apricots and pears held fairly level.

Where do most of these stocks go? Principally to Canada, The United Kingdom, and The Common Market.

Currently—June 1963 to April 1964—the trend seems to be slowing, especially for peaches, down 27 percent from a year earlier. Pineapple shipments were down 15 percent and fruit cocktail, 4 percent from a year earlier.

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## New Bulletin

The domestic market for rice has expanded. Rice sales in the U.S. have not only kept pace with population growth in the last 5 years but new markets have been gained, according to a new USDA report.

The study covers the distribution of rice in the U.S. for the marketing years 1960-61 and 1961-62.

Rice consumption is running against the recent downward trend in consumption of carbohydrates by Americans, the study shows. Milled rice production went from 12.5 million hundredweight in 1956-57 to 15.8 million in 1961-62—a gain of 26 percent for all domestic uses.

The study suggests that the increased sales resulted from stepped-up market promotion by the rice industry and increased awareness of more consumers in normally low rice States areas of the versatility and value of rice in menu planning. Introduction of new specialty rice products in recent years also may have increased rice sales.

Single copies of *Distribution Patterns of Rice in The United States*, ERS-186, are available from the Division of Information, U.S. Department of Agriculture, Washington, D.C., 20250.

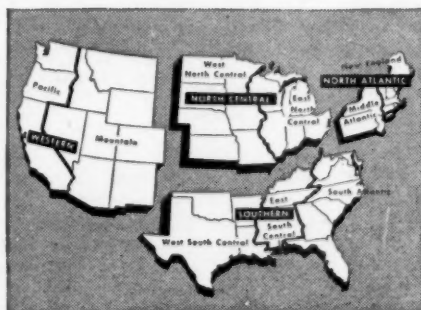
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